

REMARKS

This is a full and timely response to the Office Action of September 26th, 2006.

Reconsideration and allowance of the application and all presently pending claims are respectfully requested.

Upon entry of this Response, claims 1-10, 12, and 21-27 are pending in this application.

Claims 1, 2, 10, and 12 have been amended. Claims 11 and 13-20 are canceled. Claims 21-27 are newly added. The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims. Applicants believe that no new matter has been added by the amendments and that a new search is not necessary.

CLAIMS

35 U.S.C. §112(b)

Claim 2 has been rejected under 35 U.S.C. §112, second paragraph. Claim 2 has been amended to overcome the rejection. Thus, the rejection should be withdrawn.

Claim 1

Claim 1 is rejected under 35 U.S.C. §103(a) as purportedly being made obvious by Payumo *et al.* (U.S. Patent Application 2002/0015728) in view of Schulman *et al.* (U.S. Patent 6,808,659), as described in further detail in the Office Action. Amended claim 1 reads as follows:

1. A method of producing a structure, comprising the steps of:
 providing an alginate-based powder;
 providing at least one binder;
 dispensing the alginate-based powder and the binder onto a build platform to form a layer of an alginate-based material, *wherein the binder is dispensed with an ink jet printhead*; and
 forming a flexible three-dimensional object from the alginate-based material on the build platform, *wherein the alginate-based powder is from about 50% to 90% by weight of the alginate-based material and the binder is from about 10% to 50% by weight of the alginate-based material*.

(Emphasis added). Applicants traverse each of the 103 rejections in the Office Action and submit that the rejection of claim 1 under 35 U.S.C. §103 in view of each of the references should be withdrawn because each, separately or in combination, do not teach, disclose, or suggest each and every feature of claim 1 above. In particular, the cited references do not teach that “the binder is dispensed with an ink jet printhead... wherein the alginate-based powder is from about 50% to 90% by weight of the alginate-based material and the binder is from about 10% to 50% by weight of the alginate-based material” as recited in claim 1. Payumo does not state how much sodium alginate is used or provide any guidance as to how much sodium alginate is used. Therefore, it would not be obvious to one skilled in the art to select a range such as that recited in claim 1. Furthermore, the Office Action states that the binder of Payumo includes sodium alginate. However, the binder could not be jetted from an ink jet print head since the binder would interact with the sodium alginate and swell the sodium alginate to form a hydrogel (Page 7, lines 5-6 of the Instant Application). Therefore, including the sodium alginate in the binder is not operable in relation to amended claim 1. For at least the reasons stated above, the rejection of claim 1 should be withdrawn.

Claims 2-10, 12, and 21-27

Applicants traverse all of the §103 rejections in the Office Action. Applicants respectfully submit that pending dependent claims 2-10, 12, and 21-27 include every feature of independent claim 1 and that the cited references fail to teach, disclose, or suggest at least the features of claim 1. Thus, pending dependent claims 2-10, 12, and 21-27 are also allowable over the prior art of record. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Notwithstanding the arguments made above, the cited references, individually or in combination, do not teach, disclose, or suggest at least that “the alginate compound is selected

from alginic acid and derivatives thereof, potassium alginate and derivatives thereof, magnesium alginate and derivatives thereof, calcium alginate and derivatives thereof, and combinations thereof", as recited in claim 21. Therefore, claim 21 should be in condition for allowance.

Notwithstanding the arguments made above, the cited references, individually or in combination, do not teach, disclose, or suggest at least that "the multivalent cation is selected from: barium oxide, calcium oxide, magnesium oxide, and zinc oxide", as recited in claim 22. Therefore, claim 22 should be in condition for allowance.

Notwithstanding the arguments made above, the cited references, individually or in combination, do not teach, disclose, or suggest at least that "the multivalent cation is selected from: aluminum chloride, aluminum stearate, aluminum sulphate, aluminum acetate, aluminum nitrate, calcium carbonate, calcium ascorbate, calcium stearate, calcium lactate, calcium saccharate, calcium hydrogen phosphate, calcium chloride, calcium hydroxide, calcium acetate, hydroxyapatite, calcium nitrate, calcium fluoroborate, zinc chloride, zinc stearate, zinc acetate, zinc gluconate, zinc sulphate, zinc nitrate, barium nitrate, strontium nitrate, magnesium sulfate, magnesium nitrate, iron chloride, iron nitrate, iron sulphate, and the hydroxides of magnesium, calcium, barium, aluminum, boron, zirconium, hafnium, titanium, chromium, vanadium", as recited in claim 23. Therefore, claim 23 should be in condition for allowance.

Notwithstanding the arguments made above, the cited references, individually or in combination, do not teach, disclose, or suggest at least that "the alginate compound is selected from: mannuroic acid, polymer of mannuroic acid, guluronic acid, polymer of guluronic acid, and co-polymers of mannuroic acid and guluronic acid", as recited in claim 24. Therefore, claim 24 should be in condition for allowance.

Notwithstanding the arguments made above, the cited references, individually or in combination, do not teach, disclose, or suggest at least that “the filler is selected from: aluminum hydroxide, kaolin, talc, wollastonite, feldspar, mica, starch, starch derivatives, polycarbonates, polyepoxides, polyethylene, polyacrylates and polymethacrylates”, as recited in claim 25. Therefore, claim 25 should be in condition for allowance.

Notwithstanding the arguments made above, the cited references, individually or in combination, do not teach, disclose, or suggest at least that “the binder includes a viscosity modifier that is selected from: ethylene glycol diacetate, potassium aluminum sulphate, isopropanol, ethylene glycol monobutyl ether, diethylene monobutyl ether, glycerine triacetate, ethyl acetoacetate, polyvinyl pyrrolidone, polyethylene glycol, polyacrylic acid, sodium polyacrylate, and combinations thereof”, as recited in claim 26. Therefore, claim 26 should be in condition for allowance.

Notwithstanding the arguments made above, the cited references, individually or in combination, do not teach, disclose, or suggest at least that “the alginate-based powder includes fibers that are selected from: polymer fibers, ceramic fibers, carbon fibers, glass fibers, aramide fibers, silicon carbide fibers, aluminum silicate fibers, and combinations thereof”, as recited in claim 27. Therefore, claim 27 should be in condition for allowance.

Conclusion

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested.

In addition, any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, or statements interpreted similarly, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions.

If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



Christopher B. Linder, Reg. No. 47,751